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- .... ----, -,-----The Muscle Physiology
- The Energy Metabolism The Endocrine system
- Topic 3: Exercise Physiology
- The Cardiovascular System
- Physiological Responses and Adaptations to Weight Training
- Proprioception and Neuromuscular control during exercise Safe Prescription for Special Populations
- The safety of weight training: hemodynamic factors and cardiovascular incidents
- Topic 4: Musculoskeletal injuries
- Injury Types · Risk factors associated with Weight Training Injuries
- Types of Musculoskeletal Injuries in Weight Training
- Prevention of Injuries and Recommendations

Training

IVIUSCIE IMDalances

Tables of muscle actions

- · Specific movements and muscles for each joint
- Movement-specific joints and muscles
- Topic 7: Biomechanics foundations of Weight

# Kinetics: Analysis of forces Applications of biomechanics in weight training

- Work and muscle power
- Curves Classification of Weight Training exercises
- · Mechanical conditions for the development of
- Resources used in weight training

strength and hypertrophy

 Training machines; joint biomechanics and bodybuilding methods

Topic 8: Kinesiology and biomechanics

applied to Weight Training exercises

 Applied kinesiology Main bodybuilding exercises

# Topic 13: Abdominal: Kinesiology and Biomechanics Kinesiology considerations about the Abdominal

Exercises

### Proteins Fats Vitamins, minerals and water. Nutritional pyramid for performance

Basic breathing and muscle relaxation techniques

- Natural anabolic nutrition Basic sport nutrition The supplements
- The 20 best foods

MODULE III

Carbohydrates

Topic 9: Basic nutrition

Metabolism and energy balance

- The recovery
- MODULE IV
- Topic 10: Training cycles and programs Training systems for beginners, Intermediate level
- and Advance level The perfect warm up
- Practical training principles Cardiovascular training

Stretching

- MODULE V
- Activities that meet the demands of aerobic work Starting over
- Anatomy of the abdominal wall Muscles worked on abdominal exercises
- Overview and Morphologic aspects of the Abdominal Muscles
- Lumbar spine
- Joints of the Vertebral Column Intervertebral Disc structure and Zygapophyseal Joint Structures

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- Topic 11: Personalized physical activity Aerobic Training

List of exercises

 Establishing a Program Anaerobic training

MODULE VI Topic 12: Abdominal: Anatomy and Structure

Thoracolumbar Fascia: Architecture and Structure

- Anatomy of the Vertebral Column Planes and Axis of Motion of the Spine Anatomy of the vertebrae with emphasis on the
- Ligaments of the Vertebral Column

Exercises: Myths and Truth

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# Abdominal Exercises for fat Loss Kinesiology and Biomechanics Analysis from 45

- abdominal exercises Abdominal exercises during pregnancy
- Specific Stretch Exercises
- MODULE VII Topic 14: Organization and administration of a gym Procedures for the gym's day to any operations
- Check list of gym rules and policies Check list for staff requeriments
- Responsabilities of the staff The visual communication

Check list for maintenance Clients file

Continous improvement

training room

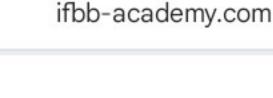
- Check list for first-aid equipment Check list for overall gym preparedness Check list for staff preparedness
- Topic 15: The safety training
- Checklist for first-aid equipment Topic 16: Questionnaires
- Training program goals Test Par-Q & you

Physical Fitness Questionnaire

Emergency preparedness

- Health Questionnaire Questionnaire for a training program BONUS

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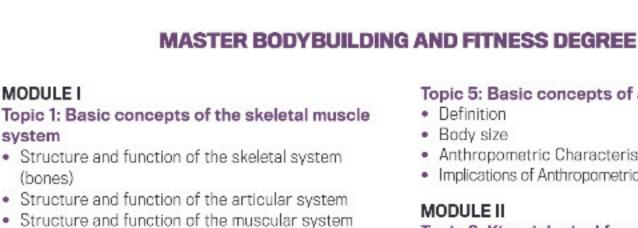




MODULE I

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#### Musculoskeletal adaptations to weight training bodybuilding Muscular functions Classification of muscles

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Training

Curves

Work and muscle power

strength and hypertrophy

Main bodybuilding exercises

Topic 13: Abdominal: Kinesiology and

Exercises: Myths and Truth

Abdominal Exercises for fat Loss

Biomechanics

Exercises

MODULE VII

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ILLUSTRATIONS: ANDRÉS VAOUERO

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Applied kinesiology

Resources used in weight training

Weight Training Proprioception and Neuromuscular control during

Injury Types

Topic 2: General Physiology

Topic 3:Exercise Physiology

Physiological Responses and Adaptations to

Safe Prescription for Special Populations

factors and cardiovascular incidents

The safety of weight training: hemodynamic

The Cardiovascular System

The Joint system

The Bony system

The Muscle Physiology

The Energy Metabolism

The Endocrine system

 Risk factors associated with Weight Training Injuries Types of Musculoskeletal Injuries in Weight

Prevention of Injuries and Recommendations

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- Topic 9: Basic nutrition Metabolism and energy balance Carbohydrates

Vitamins, minerals and water.

Natural anabolic nutrition

Basic sport nutrition

 The supplements The 20 best foods

The recovery

Stretching

Nutritional pyramid for performance

Basic breathing and muscle relaxation techniques

MODULE IV Topic 10: Training cycles and programs Training systems for beginners, Intermediate level and Advance level

The perfect warm up

Proteins

Fats

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- MODULE I

(bones)

Topic 2: General Physiology The Joint system

Topic 1: Basic concepts of the skeletal muscle

Structure and function of the skeletal system.

Musculoskeletal adaptations to weight training

- Topic 3:Exercise Physiology The Cardiovascular System Physiological Responses and Adaptations to
  - Weight Training Proprioception and Neuromuscular control during exercise Safe Prescription for Special Populations

Training

- The Energy Metabolism The Endocrine system
- The Bony system The Muscle Physiology
- - factors and cardiovascular incidents Topic 4: Musculoskeletal injuries Injury Types

Risk factors associated with Weight Training

Types of Musculoskeletal Injuries in Weight

Prevention of Injuries and Recommendations

The safety of weight training: hemodynamic

bodybuilding methods Topic 8: Kinesiology and biomechanics applied to Weight Training exercises

Training machines; joint biomechanics and

Applications of biomechanics in weight training

· Classification of Weight Training exercises

Mechanical conditions for the development of

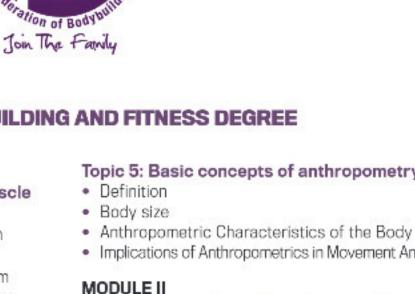
 Biomechanics of the Lumbar Spine Application of Biomechanics on Abdominal Machines and devices used for Abdominal

Kinesiology considerations about the Abdominal

 Check list for staff requeriments Responsabilities of the staff

Check list of gym rules and policies

- PROF. RAFAEL SANTONJA PROF. MAURICIO DE ARRUDA PROF. JOSE MARIA GARCIA PROF. NIEVES LOPEZ CILLANUEVA



#### Implications of Anthropometrics in Movement Analysis Structure and function of the articular system. MODULE II Structure and function of the muscular system Topic 6: Kinesiological foundations of

- Movement-specific joints and muscles Topic 7: Biomechanics foundations of Weight Training
- bodybuilding Muscular functions Classification of muscles Factors that affect muscle function

Muscle Imbalances

Tables of muscle actions

- Kinematics: the description of the movement Kinetics: Analysis of forces Applications of biomechanics in weight training

Work and muscle power

- Classification of Weight Training exercises Mechanical conditions for the development of strength and hypertrophy
- applied to Weight Training exercises

Specific movements and muscles for each joint

- Topic 8: Kinesiology and biomechanics
- Applied kinesiology Main bodybuilding exercises

- Biomechanics of the Lumbar Spine Application of Biomechanics on Abdominal Machines and devices used for Abdominal
- Guaranted of quality
- Maintenance Preparation of the physical structure of the weight
- Waist / Hip Ratio Risk factors Anthropometric evaluation
- The anti-doping in sport

- Kinesiology and Biomechanics Analysis from 45 abdominal exercises Abdominal exercises during pregnancy Specific Stretch Exercises

Topic 14: Organization and administration of a gym

Procedures for the gym's day to any operations

- MASTER BODYBUILDING AND FITNESS DEGREE Topic 5: Basic concepts of anthropometry

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- · Resources used in weight training Training machines; joint biomechanics and bodybuilding methods

- Kinematics: the description of the movement







